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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,668	10/20/2000	Takao Mukai	36856.366	7526

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Keating & Bennett LLP  
10400 Eaton Place, Suite 312  
Fairfax, VA 22030

EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/692,668

**Applicant(s)**

MUKAI ET AL.

**Examiner**

Julio C. Gonzalez

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4, 5, 7, 9, 10, 13, 14, 16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 7, 9, 10, 13, 14, 16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 7, 10, 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ago et al (US 5,684,437) in view of Horiuchi (JP 409294045A).

Ago et al discloses a surface acoustic wave device comprising a piezoelectric substrate 5 having a pair of edges, an interdigital transducer 4 provided on main region wherein a distance L is between at least one inner edge and corresponding one of the substrate edges is about  $\lambda/10$  to about  $8\lambda$  (see figures 2, 4, 5). Also, the step depth is in the range of about  $2\lambda$  to about  $6\lambda$  (column 5, lines 47-49). Moreover the IDT has a plurality of electrode fingers (see figure 2 and column 2, lines 7-11).

However, Ago et al does not disclose having a substrate with a step formed extending from a substrate edge.

On the other hand, Horiuchi discloses for the purpose of improving resonance characteristics with simplified structure, a resonator 11 having two IDT's 13 and 14 (see figure 9). Also, Horiuchi discloses having steps extending from substrate edges of the resonator 11 (see figure 4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a surface acoustic wave as disclosed by Ago et al and to modify the invention by having a substrate with a step formed extending from a substrate edge for the purpose of improving resonance characteristics with simplified structure as disclosed by Horiuchi.

3. Claim 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ago et al and Horiuchi (JP 409294045A) as applied to claims 1 and 10 above, and further in view of Kadota et al (US 5,714,830).

The combined surface acoustic wave discloses all of the elements above. However the combined surface acoustic does not disclose that the fingers have different wavelengths.

On the other hand, Kadota et al discloses for the purpose of reducing the manufacturing cost of surface wave resonators, outermost electrode fingers with a wavelength of about  $\lambda/8$  and the other electrode fingers of about  $\lambda/4$  (column 3, lines 42-48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined surface acoustic wave as disclosed above and to modify the invention by using different wavelengths for the electrode fingers for the purpose of reducing the manufacturing cost of surface wave resonators as disclosed by Kadota et al.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 4, 5, 7, 9, 10, 13, 14, 16 and 18 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

June 27, 2003

 **KARL TAMAI**  
**PRIMARY EXAMINER**